

November 18, 1969

Dr. Gordon H. Bower
Department of Psychology
Stanford University
Stanford, California 94305

Dear Gordon:

I would like to call your attention to an unusually bright, energetic and young student, Mr. Craig I. Fields, who ^{is} practically certain to get his Ph.D. here this spring and naturally is looking for a position next year. I am writing to you because of Mr. Fields' interest in learning, computer simulation, and math models. Enclosed is a copy of a paper which very briefly summarizes the chief results of his experimental work with me for his dissertation. The cardiac physiologists are interested in the fact that the PR interval of the electrocardiogram can be trained independently of the RR interval. I think you will be interested in some of the phenomena of learning, such as the slow progressive learning curves versus those with a steep S-shaped function, and the fact that there do not seem to be intermediate grades in between -- something that he will document more fully with a distribution of quantitative indices of the shape of the 70 curves. You may also be interested in the average of immediate after-effects of single reinforcements (which are not unconditioned effects) and which Mr. Fields is going to try to investigate by reinforcing such widely distributed intervals that the reinforcements do not overlap.

In addition to this experimental work, which by itself would be enough for a dissertation, Craig Fields is working with Mark Kac on a nerve-network math-model of the learning. Professor Kac says that Mr. Fields has enough mathematical talent so that he is certain that, if he wanted to, he easily could get a Ph.D. here in mathematics, but he is not taking that much work in that field.

Mr. Fields is working on computer simulation of his nerve-network model and on the recommendation of Project MAC, has been given an \$18,000 grant from Project Cambridge at MIT for computer time and some ancillary equipment to write out a generalized program that they believe will be useful in the testing of a variety of nerve-network models. It is reasonably likely that he will have a job offer from them on about December 1. Since he would much prefer an academic position, I am writing to you to find out whether there may be any possibilities in the Department of Psychology at Stanford.

Mr. Fields is an unusually talented, unusually energetic young man who graduated from MIT at the age of 19 and will complete his work here

in four years, which is on the fast side for this place. When he first came, his tremendous energy and ambition, which led him to dash off somewhat wildly in a number of different directions, plus a certain air of intellectual arrogance (sometimes described as an inability to tolerate fools gladly) irritated a number of people around here. He has since matured considerably (as do many of the immature who also are chronologically young) and made friends with some of the people who at first were most irritated. Essentially he has good manners and no element of meanness or unfairness, only impatience. He has shown his ability to concentrate his energies realistically on a problem and to carry it through to completion. Mr. Fields is prepared to teach the courses that are described on the enclosed sheets. He has a real interest in teaching and the ability to explain things clearly, so that I believe he should make a good teacher -- in fact, he has taught me quite a bit about computers and the rationale of various types of analyses that one does with them.

I believe that you would find him to be a stimulating, cooperative, and valuable addition to your faculty, and that he will continue to mature, presenting only the average problems typical of extremely bright and energetic young men who are in a hurry to get ahead with their pursuit of research and knowledge. If my space and money were not already committed, I would be delighted to keep Craig Fields on here; in fact, I'm going to strain to try to do so for this summer. If I could not recommend him highly, I would not be writing to you.

Cordially,

Neal E. Miller

NEM:emc